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ABSTRACT

Selected aspects of the remedial reading-writing program of Miami-Dade Junior College were evaluated. Placement in the program was designed as the independent variable. Grade point average, reading and writing test scores, continuation in college, and performance in regular college courses were dependent variables. Students earning a raw score of 22 or less on the School and College Ability Test, Form 1A, Verbal, were classified as academically underprepared for college-level work and were required to enroll in the remedial program. Results indicate that the program does not produce any meaningful differences in student withdrawal from college, is not effective in raising grade point average during the second semester of college enrollment to a "C" level, and does not result in significantly higher scores on a reading or writing test when compared with the control group scores. The remedial program produced no differential effects by race or sex. A paradigm for devising remedial programs is suggested. (Author/LR)

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DO REMEDIAL PROGRAMS REALLY WORK?[1]

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Miami-Dade Junior College, like other open-door community junior colleges, offers a remedial program for the academically underprepared student. Since its founding ten years ago, Miami-Dade has placed students in the remedial program on the basis of achievement test scores. A concerted attempt has been made to raise academic performance in such areas as English, math, reading, chemistry, and biology.

One typical rationale offered by advocates of remedial or developmental programs on a junior college level is rooted in the concept of offering to each student the opportunity to develop his individual capacities--academic, vocational, and personal--as completely as possible. Another frequently offered philosophy emphasizes the remediation or development of academic skills per se. It is this latter rationale, with its inherent assumption that remedial courses improve academic skills more than ordinary college-level courses, that was chosen for evaluation.

Although there is near universal recognition of the problem, only 20 per cent of the community junior colleges surveyed by Schenz[3] had designed special programs and curricula for academically underprepared

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[1]Based on the author's dissertation, "An Experiment Designed to Evalute a Program Developed to Aid the Academically Underprepared Junior College Student." Submitted in partial fulfillment of the requirements for the Ph.D. at Florida State University, 1969.

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[3]Robert F. Schenz, "An Investigation of Junior College Courses and Curricula for Students with Low Ability" (unpublished Ed.D. dissertation, University of California, 1963), Dissertation Abstracts, Vol. 24 (1963), p. 1889.

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students. Most colleges appear to let the student take his chances. Schenz also noted that ". . .very little research regarding the success or failure of students with low ability" is reported by the community junior colleges. Concerning the paucity of research in this area, Blocker states that "those that do have so-called developmental programs have frequently organized them in haphazard fashion and have uniformly ignored the responsibility to evaluate their contributions honestly."[4]

Where remedial programs have been adopted, it has generally been assumed that students do profit from a remedial program designed to strengthen their academic weaknesses. Since there is no reason to doubt that junior colleges will continue to enroll an increasing number of students and little reason to doubt that large segments will continue to be academically underprepared as operationally defined for college-level work, this assumption needs as thorough an empirical grounding as possible.

In a 1968 publication, John E. Roueche stated that "with very few exceptions, little research has been implemented to evaluate the effectiveness of these remedial programs and instructors . . ." and that "intuition rather than research appears to be the basis for most remedial programs."[5] He cites four examples of junior colleges which have extensive remedial programs and details the nature of the programs and evaluations which have been made of the programs. In none of the studies cited was there a control group in the design of the program.

The evidence indicates that control groups are generally nonexistent in educational research. There appears to be a basic philosophical problem

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[4]Clyde E. Blocker, Robert H. Plummer, and Richard C. Richardson, Jr., The Two Year College: A Social Synthesis (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), p. 208.

[5]John E. Roueche, Salvage, Redirection, or Custody? (Washington, D. C.: American Association of Junior Colleges, 1968), p. 41.

involved in a study that "manipulates" a group of students by not permitting them to take a planned remedial program. At this point, many educators raise questions about the "morality" of such placement of students. It is said that it is somehow "immoral" not to permit students to enroll in a program that we believe is "good" for them. The underlying assumption that it is academically good for the student to spend a semester in remedial work is made notwithstanding a total absence of data to support such a position.

Method

At the time of this study, all first-time-in-college freshmen were required to take a placement battery which consisted of the School and College Ability Test, Form 1A (SCAT), and the Nelson-Denny Reading Test, Form A. Those students who earned a raw score of twenty-two or less on the SCAT Verbal (twenty-first percentile, Miami-Dade Junior College norms) were operationally defined as academically underprepared for college-level work and were required to enroll in English 090, Remedial Reading-Writing.

The independent variable was designated as placement in English 090. The basic assumption was that minimal levels of skills in reading and writing are critical for success in any college curriculum. Therefore, students taking part in an intensive remedial reading and writing program should fare better than comparable students not enrolled in such a program. The selected dependent variables were grade point average, reading test scores, continuation in college, and performance in regular college courses. These variables have the advantage of being relatively easy to define operationally and to assess.

The population was categorized into two groups:

1. Control Group - a randomly selected control group not permitted to enroll in English 090.
2. Experimental Group - the total group of students enrolled in English 090.

The selection of the Control Group proceeded as follows: After each testing session beginning in May, 1967, students filled out a questionnaire which was essentially designed to aid the academic advisor in prescribing courses for students. This questionnaire contained data which permitted sorting students into full-time students and part-time students on the basis of their intention for enrollment in the Fall Term, 1967-68. It also identified those students who were transferring or returning to Miami-Dade Junior College. This allowed selection of full-time, first-time-in-college students for the Fall Term. All students whose attendance was to be supported by the Veterans Administration were excluded inasmuch as the federal government does not recognize remedial work for payment purposes. It was required that the students be enrolled in Orientation 101 in order to be included in the study because the State of Florida Junior College Questionnaire was administered during the course. Data on race, sex, and age were derived from the questionnaire responses.

After the group of full-time, first-time-in-college students who scored below the twenty-first percentile on the SCAT Verbal was defined, every sixth student from an alphabetical listing was designated as a member of the Control Group. A list of names of those students designated for the Control Group was then submitted to an academic advisor. These students were not permitted to take the remedial reading-writing course

(English 090) for which their test scores made them eligible, but were instead placed in the regular college-level freshman English course (English 101).

It should be noted that the students had no option in their selection as members of the Control Group. In addition, there was almost no chance that a student was aware that he was taking part in an experiment since students did not receive their test results until November and even then did not know the cut-off score for placement in the remedial reading-writing course.

In the assignment of students to the Control Group, care was also taken that neither the total group of advisors nor the instructors in whose classes the students enrolled were aware of the experiment. This was achieved by not announcing that such a research program existed and by having only one advisor responsible for the placement of all the Control Group. Instructors did not have access to the placement test results for their students until after the term had been completed.

It was assumed that instructor bias would not be a relevant factor inasmuch as students were permitted to enroll for English at the time of their choice and thus with different instructors, thereby cancelling out the bias that would have been introduced by using only one or two instructors for the Control Group. For the purpose of this study, the teaching process per se was not analyzed.

Motivational level was controlled by the non-voluntary nature of remedial course enrollment. Curriculum control was maintained by the fact that much of the incoming freshman's program was already mapped out for him. A majority of the academically underprepared students took Social

Science 101 (3 credits), remedial mathematics (3 credits), remedial English--or English 101 for the Control Group (3 credits), Orientation 101 (1 credit), and physical education (1 credit).

Analysis of the results proceeded on the basis of a comparison between the Control Group and those students enrolled in English 090, designated as the Experimental Group. The following hypotheses, related to the general question of the effectiveness of selected aspects of the remedial program, were tested. Each hypothesis was stated in null form.

Hypothesis A

There is no difference between the Experimental and Control Groups on mean grade point average at the end of the first term or at the end of the second term.

Hypothesis B

There is no difference between the Experimental and Control Groups on the Nelson-Denny Reading Test, Form 1B, and the Sequential Tests of Educational Progress, Form A, Writing.

Hypothesis C

There is no difference in continuation in college as measured by the percentage of students enrolled at the end of each term in the Experimental and Control Groups.

Hypothesis D

There is no difference between the Experimental and Control Groups with respect to level of performance in regular college courses.

Results and Discussion

The data were collected and analyzed on students who enrolled in the Fall Term, 1967-68. Grade point average and attrition statistics were also computed for the Winter Term, 1967-68. The final number of students in each group on the last day of registration for the Fall Term was 427 in the Experimental Group and 73 in the Control Group. A test of statistical significance between the Experimental Group and Control Group on initial test scores for the School and College Ability Test, Form 1A, Verbal, and the Nelson-Denny Reading Test, Form A, indicated that the groups did not differ significantly on test score means.

Hypothesis A - Grade Point Average

A critical ratio on the difference between mean grade point averages for the Experimental and Control Groups was determined on an overall basis and by sex and race. The results required that the null hypothesis with regard to the overall group differences in grade point average be rejected for the Fall Term since the Experimental Group performed at a significantly higher level (probability less than .001) than the Control Group. This difference held for sex (probability less than .01) but not for race. Yet, the Experimental Group's mean grade point average of 1.83 was well below the 2.06 mean grade point average for the entire freshman population for the Fall Term, 1967-68. This difference would be more marked, of course, if the overall freshman grade point average were to exclude the Experimental Group, which the 2.06 figure does not. It may well be that the higher grade point average for the Experimental Group is related to differing grading practices adhered to for remedial work. It is typically the case that students in a remedial program are not graded as severely as those in college parallel courses.

The mean grade point average difference for the Winter Term between the two groups was not statistically significant. Although the Experimental Group grade point average dropped from 1.83 to 1.59, the grade point average for the Control Group remained at 1.47. When compared on the basis of sex and race, there continued to be no significant difference between the groups.

Hypothesis B - Comparison on Reading and Writing Measures

The results of the post-test comparisons differed relative to the measure used. On the Nelson-Denny Reading Test, Form B, the Experimental Group performed no better than the Control Group. On the Sequential Tests of Educational Progress, Form A, Writing, the Control Group performed at a significantly higher level than the Experimental Group (probability less than .01). The fact that the Control Group performed as well as the Experimental Group on the reading measure (there was no significant difference between the groups either at the beginning or the end of the course) may be accounted for in terms of a general improvement in reading accruing from a term of college which included a regular freshman English course for the Control Group.

That the Control Group improved in reading without a special course of remediation as much as the Experimental Group can be supported somewhat by the general literature on remedial reading as surveyed by Harris.[6] The findings suggest that many academically underprepared students improve their reading level without special treatment simply as a result of attending college for one term. On the other hand, the English 101 course was heavily oriented toward those skills measured by the Sequential Tests of Educational Progress, and the Experimental Group was not exposed to such experiences.

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[6]Theodore L. Harris, "Summary of Investigations Relating to Reading," Journal of Educational Research, Vol. 60 (1967).

Race and sex variables were of no relevance to differential performance on any post-test measure except that both Caucasians and Negroes performed better as measured by the Sequential Tests of Educational Progress when placed in the Control Group.

Hypothesis C - Continuation in College

The rejection or non-rejection of this hypothesis is a function of the term in which the measure is taken. For the Fall Term, there was no significant difference between the Experimental and Control Groups with respect to attrition rate. However, only three of the fifty-six students in the Control Group for the Winter Term withdrew during that term, while eighty-nine of the 377 students originally enrolled for the Experimental Group withdrew during the Winter Term. This difference in attrition rate during the Winter Term between the two groups is highly significant (probability less than .001).

There appears to be little solid basis for conjecture with regard to this finding. It may be that after one term of having been more or less "sheltered" from hard-core academic courses, the students in the Experimental Group found themselves floundering more than they had during the first term and decided to withdraw. Partially substantiating this rationale is the fact that the attrition rates for the Control Group during the Fall Term and the Experimental Group during the Winter Term do not differ significantly (chi square equals 1.80). In any case, it appears that those students in the Control Group who did enroll for the Winter Term were remarkably persistent. Neither sex nor race was a significant variable with respect to whether a student withdrew during the Fall or Winter Terms.

Hypothesis D - Performance in Regular College Courses

The data obtained provided the opportunity to compare differences in performance in regular academic courses between the Experimental and Control Groups. Grades were obtained for students from the Experimental and Control Groups enrolled in Social Science and Humanities during the Winter Term, and a comparison was made of grades earned by the Experimental and Control Groups in the regular freshman English course (English 101). The importance of these data resides in the fact that most remedial programs attempt, either explicitly or implicitly, through improved skills in reading and writing, to provide the student with a better chance to do well in courses other than those of a remedial nature.

With respect to grades earned in English 101, two comparisons were made. First, the grade distribution of the Control Group was compared with the grade distribution for all students enrolled in English 101 during the Fall Term. A chi-square analysis indicated that a significantly higher proportion of regular students in English 101 earned grades of "C" and better, and also grades of "D" and better, than students in the Control Group.

Two aspects of the grade distribution for the Control Group should be noted. First, only 12 per cent received a grade of "F", whereas 10 per cent of the regular students in English 101 received a grade of "F". Second, 70 per cent of the Control Group did, in fact, earn a grade of "D" or better in English 101 without benefit of remediation. When it is recalled that those students in the Control Group were randomly selected from those who scored below the twenty-first percentile on the SCAT Verbal and that they were competing against the top 80 per cent of the students (the bottom 20 per cent, of course, constituted the Experimental Group), their passing

rate is even more striking. One of the major implications of such success without remediation is that the present regulations require a group of students to spend one term in remedial work when, in fact, 70 per cent of them could take and pass a college-level English course.

A second comparison was made between the grade distributions of the Experimental Group, who took English 101 during the Winter Term, and the Control Group, who took English 101 without remediation during their first term. When pass was defined as a grade of "C" or better, the Experimental Group was found to have 54 per cent passing as opposed to 47 per cent for the Control Group. This difference in percentage passing is not statistically significant. When pass was defined as a grade of "D" or better, 73 per cent of the Experimental Group were in this category and 70 per cent of the Control Group. This difference, also, does not reach the .05 level of significance.

Not only then do 70 per cent of the students normally eligible for remedial work, but enrolled in English 101, earn a grade of "D" or better in that course, but even after a full term of remediation, only 73 per cent of the Experimental Group earned a "D" or better. The net effect is that after one term of remedial work in a reading-writing program, only 3 per cent more students passed (a grade of "D" or better) the English 101 course than passed it without remediation.

But even if many of this academically underprepared group of students do persist, and do pass a college-level English course without remediation, what of their performance in other college-level courses? Not all students from either the Experimental or Control Groups took identical courses, but sufficient numbers did take the core Social Science and Humanities courses to permit comparisons.

Whether judged on the basis of having earned a grade of "C" or better, or a grade of "D" or better, the Control Group students and the students in the Experimental Group did not perform at a significantly different level in either the Social Science course or the Humanities course. Thus, those students provided with the purported benefits of remedial work performed no better overall than did their counterparts from the Control Group when they took Social Science and Humanities during their second term of enrollment at the College.

Summary and Implications

This study has demonstrated that for all practical purposes the remedial reading-writing program at Miami-Dade Junior College, as presently designed, does not produce any meaningful differences in student withdrawal from college, is not effective in raising the grade point average during the second semester of college enrollment to a "C" level, does not result in achievement at a higher level in Social Science, Humanities, or English courses, and is not effective in producing a score on a writing test or a reading test that is any higher for those students in the remedial program than it is for those students in a randomly selected Control Group who did not participate in the remedial program.

That there were cases of individuals in the remedial program who improved their scholastic standing and were salvaged academically is attested to by cases of students in the Experimental Group who earned a grade point average of 3.0 ("B") and who improved by as much as 35 per cent their standing on a standardized achievement test. Yet, the overall group measures tend to wash out these individual cases when mean scores are considered.

It is precisely the identification of those students who can benefit from a standard remedial program such as offered at Miami-Dade Junior College and elsewhere that is urgently needed. Likewise, those students who cannot benefit from such a standard program must be identified and relevant programs developed for them. It is a gross pedagogical error to assume that the bottom 10 or 15 or 20 per cent of a group, based on a standardized achievement test, form a homogeneous group, all capable of benefiting from the same type curriculum.

Gilbreath[7] points out the importance of a clearly defined set of characteristics for each group of students we wish to treat, followed by differential treatment designed from such knowledge. Based on the implications of the results of this study and the research available on remedial programs in the junior college, it would appear that a valid paradigm for establishing remedial programs is as follows:

> Differential diagnosis of student characteristics.
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> Prescription of curriculum based on the educationally relevant student characteristics.
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> Evaluation of the program.[8]

The use of such a paradigm may permit the identification of the strengths and weaknesses of a program as it is applied to particular groups of students with like characteristics.

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[7]Stuart H. Gilbreath, "Appropriate and Inappropriate Group Counseling with Academic Underachievers," Journal of Counseling Psychology, Vol. 15 (1968), pp. 506-511.

[8]A similar paradigm is suggested by John R. Hills in "Placement from a Decision-Theory Frame of Reference," Florida Journal of Educational Research, Vol. 9 (1968), pp. 77-84.

For the foreseeable future, the open-door community junior college will continue to admit, and to purportedly serve, those students who do poorly on standardized achievement tests and who are viewed as academically underprepared. It is surely one of the junior college's primary responsibilities to provide a significant, meaningful, and relevant curriculum for these students, and this cannot be done if they are treated as a homogeneous group. If the junior college is to be more than a revolving door or a cooling-out place, then it must serve well, as part of its unique function, the academically underprepared student.